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| 09/465,592 | 12/17/1999 | JOANNE P. CULVER | LAZE-01000US | 9065 |
| 23910 | 7590 | 02/08/2005 | EXAMINER | |
| FLIESLER MEYER, LLP FOUR EMBARCADERO CENTER SUITE 400 SAN FRANCISCO, CA 94111 | | | | CHU, KIM KWOK |
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| | | | | 2653 |

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/465,592 | CULVER ET AL. | |
| | Examiner Kim-Kwok CHU | Art Unit 2653 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on Amendment filed on 10/18/2004.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-46,49-51,57-60,91-93,99 and 100 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) 10,11,13-19,22,23,29,32,40-46,49-51 and 57, 58 and 60 is/are allowed.

6) Claim(s) 1-9,12,20,21,24-28,30,31,33-39,59,91-93,99 and 100 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 12/17/1999 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

- Certified copies of the priority documents have been received.
- Certified copies of the priority documents have been received in Application No. _____.
- Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>9/13/2004</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____. |

Response to Remarks

1. Applicant's Remarks filed on October 18, 2004 have been fully considered.

(a) Applicant disagrees that the prior art of Carver teaches the amended feature "consisting essentially of silicon dioxide" (page 31 of the Remarks, lines 12 and 13). Accordingly, a new found prior art of Akamine et al. where Akamine teaches that a cantilever/platform consists essentially of silicon dioxide.

(b) Applicant disagrees that Carver's cantilever is a platform structure. Accordingly, A cantilever can be considered as a platform structure which supports a tip. The new found art of Akamine teaches a platform structure which consists of essentially a silicon dioxide device (cantilever).

(c) The allowed claims 33 and 59 are respectively rejected with a new found art.

Claim Objections

2. Claim 92 is objected to because of the following informalities:

(a) in claim 92, line6, the term "essentially of an oxide" should be changed to --essentially of a silicon dioxide-- so that its expand rate is valid.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-9, 12, 24, 25, 30, 31, 34-36, 38, 39, 91-93, 99 and 100 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koyanagi et al. (U.S. Patent 5,471,064) in view of Duerig et al. (U.S. Patent 4,831,614) and Akamine et al. (U.S. Patent 4,943,719).

Koyanagi teaches a memory apparatus very similar to that of the present invention. For example, Koyanagi teaches the

following:

- (a) as in claim 1, a moveable media 4 having a surface 4 for placing anomalies thereon (Figs. 4, 5a, 5b and 5c);
- (b) as in claim 1, a moveable read/write mechanism 5 comprising a moveable platform (Fig. 4);
- (c) as in claim 1, a tip 25 connected with the moveable read/write platform 5 and adapted to access the surface 4 (Fig. 4);
- (d) as in claim 1, a media movement mechanism 401 operably attached to the moveable media 4 and configured to move the media in response to media control signals (Fig. 4);
- (e) as in claim 1, a read/write platform movement mechanism operably attached to the read/write platform 5 and configured to move the read/write platform in response to a read/write platform control signals (Fig. 4);
- (f) as in claim 1, the tip 25 can cause the formation of an anomaly on the surface and read an anomaly on the surface (Figs. 4, 5a, 5b and 5c);
- (g) as in claim 2, an i/o device 10a having an addressing port for identifying an address corresponding to an area of the media surface where data is to be one of written and read (Fig. 4; XYZ drive controller 10a identifies an address to be written);

- (h) as in claim 2, an i/o port 11, 12 for transferring one of data to be read from and written to the media surface via the at least one fine tip portion (Fig. 4);
- (i) as in claim 2, an addressing control device 10a configured to send control signals to each of the media and platform movement mechanisms so that the at least one fine tip portion passes an area on the media surface corresponding to an address identified at the addressing port (Fig. 4; XYZ are the control signals);
- (j) as in claim 3, the writing fine tip portion 25 comprises an electromagnetic radiation energy source (Fig. 4; write mode);
- (k) as in claim 4, the reading fine tip portion 25 comprises an electromagnetic radiation sensitive receptor (Fig. 4; read mode);
- (l) as in claim 5, the writing fine tip portion 25 applies a repositioning force comprising at least one of a mechanical force, chemical force, electrostatic force, electromagnetic radiation, and magnetic field to cause the anomalies (Fig. 4);
- (m) as in claim 6, the writing fine tip portion 25 utilizes the repositioning force to at least one of remove and reposition of at least one of atoms, molecules, electrons, and

magnetic domains at least one of above, on and below the media surface to cause the anomalies (Fig. 4, 5a, 5b and 5c);

(n) as in claim 7, the reading fine tip 25 is configured to detect at least one of current, voltage electromagnetic radiation, vibration parameters [phase and amplitude] having been one of caused or affected by the anomalies (Figs. 7a and 7b);

(o) as in claim 8, an analysis device 8 configured to analyze at least one of, patterns of current between the reading fine tip and the media surface, patterns of electromagnetic radiation received from the media surface in response to a stimulus patterns of shifting phase of vibrations of the reading fine tip; patterns of changing amplitude of the reading fine tip; and patterns of at least one of current and voltage between the reading fine tip and the media surface (Fig. 4);

(p) as in claim 9, least one of the media movement mechanism 401 and the platform movement mechanism 5 comprises an electrostatic device constructed to move at least one of the media and the platform based on an applied electrostatic potential (Fig. 4);

(q) as in claim 9, an electrostatic control and supply device 12 connected to the addressing control device and configured to apply an electrostatic potential to the

electrostatic device to move at least one of the media and the platform to pass the area on the media surface according to the control signals sent by the addressing control device (Fig. 4; electrostatic controller is an inherent feature for driving the tip 25 and media 4);

(r) as in claim 12, a calibration mechanism 9 configured to move the media 4 and the platform 5 to a full extent of a range of motions and determined amounts of electrostatic force needed to move the media 4 to plural positions in relation to the platform (Fig. 1);

(s) as in claims 24 and 25, the media is constructed from a substrate having surface texture on the media (Fig. 5a-c);

(t) as in claim 30, at least one positioning mechanism 5 attached to the platform and at least one of the fine tip portions, the positioning mechanism configured to position the fine tip portion at one of at, above, and below the media surface while reading, and position the fine tip at one of at, above, and below the media surface while writing (Fig. 4);

(u) as in claim 31, a cantilever 3 attached to each fine tip portion 1; and an activation/pickup device connected to each cantilever (Fig. 2; column 5, lines 22-36);

(v) as in claim 34, a source 200 configured to produce electromagnetic radiation emanations; and a focusing device 17

configured to direct the emanations to a predetermined location on the media surface (Fig. 2);

(w) as in claim 35; a receptor 201 configured to receive a return of the emanation from the media surface (Fig. 2);

(x) as in claim 36, the source 200 comprises one of a light emitting diode; and the focusing device 17 comprises a waveguide 13 configured to direct a narrow beam from the fine tip (Fig. 2);

(y) as in claim 38, a z-axis mechanism 5 connected to at least one of the fine tip portions 1 and the platform, wherein the z-axis mechanism is configured to place the at least one of the fine tip portions at least one of on and near the media surface (Figs. 1 and 4); and

(z) as in claim 39, each fine tip portion 1 comprises a cantilever 3 having a chamfered tip; and a z-axis drive mechanism 5 attached to the platform 5 and connected to the cantilever; wherein the z-axis drive mechanism is configured to place the cantilever at least one of on and a close proximity to the media surface (Figs 1 and 4).

However, Koyanagi does not teach the following:

(a) as in claim 1, the moveable media having a first substrate consisting essentially of silicon dioxide;

(b) as in claim 1, a plurality of cantilevers and one or more of the plurality of cantilevers including the tip;

(c) as in claim 1, the moveable platform having a second substrate comprising silicon dioxide;

(d) as in claim 1, each of the at least one fine tip portion is adapted to be independently actuated toward the media surface; and

(e) as in claim 1, the first and second substrate expand at substantially the same rate over an operating temperature range.

Duerig teaches the following:

(a) a moveable media 1 having a first substrate 2 comprising silicon dioxide (Fig. 1; column 3, lines 32-36);

(b) a plurality of cantilevers each has a tip 13 (Fig. 4; an array of tips 10); and

(c) each of the at least one tip 13 is adapted to be independently actuated toward the media surface (Fig. 8; column 4, lines 24-28).

Akamine teaches the following:

(a) a moveable platform (cantilever) having a second substrate 34 consisting essentially silicon dioxide (Fig. 12; column 4, lines 46-50, lines 65 and 66).

The substrate of a recording media is usually made of a silicon material such as glass because it is a transparent material for transmitting a light beam. However, in the field of ATM or AFM, the substrate of the recording media also

requires the silicon material be non-conductive and heat insulative. Since Koyannagi's data recording means 4 is under electrical voltage, it would have been obvious to one of ordinary skill in the art to use a silicon dioxide as a substrate layer of the media such as Duerig's, because the silicon dioxide is both a ceramic material which is very stable under high temperature and a dielectric material which is not conductive.

On the other hand, there is an advantage of accessing multiple anomalies at the same time. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to fabricate a plurality of tips which is independently actuated such as Duerig's, because the multiple actuating tips can read/write anomalies simultaneously.

To securely attach a read/write head such as Koyannagi's, tip 1 to its moveable platform/cantilever, it would have been obvious to one of ordinary skill in the art at the time of invention to manufacture a tip from a substrate containing silicon dioxide material such as Akamine's cantilever layer 34, because the silicon dioxide holds the tip with a strong mechanical bonding.

With respect to the thermal expansion of the two substrates, Although Koyanagi et al. in view of Duerig et al. and Akamine do not teach the silicon dioxide expands the same

rate over an operating temperature, since both substrates made of the same material (silicon dioxide) under the same operating environment, it would have been obvious to one of ordinary skill in the art to conclude that both silicon dioxide substrates are expanded at the same rate.

5. Claims 91-93 have limitations similar to those treated in the above rejection, and are met by the references as discussed above.

6. Claims 99 and 100 have limitations similar to those treated in the above rejection, and are met by the references as discussed above. Claims 99 and 100 however also recite the following limitations:

(a) as in claims 99 and 100, the second substrate comprising one or more insulators.

Respect to the second substrate, Koyanagi in view of Duerig et al. and Akamine teach that the second substrate is an insulator made of a dielectric material such as silicon dioxide.

7. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koyanagi et al. (U.S. Patent 5,471,064) in view of Duerig et al. (U.S. Patent 4,831,614) and Akamine et al. (U.S. Patent 4,943,719) and further in view of Adderton et al. (U.S. Patent 6,196,061).

Koyanagi teaches a memory apparatus very similar to that of the present invention. For example, Koyanagi teaches the following:

- (a) as in claim 20, the drive mechanism 5 includes actuators, coupling rod 21, electrical paths and electrical supplies (Fig. 3); and
- (b) as in claim 21, a sensor 8 configured to detect an amount of movement of the actuators; wherein the sensor provides feedback to a control device regulating an amount of the electricity supplied.

However, Koyanagi in view of Duerig et al. and Akamine do not teach the following:

- (a) as in claim 20, the media movement mechanism and the platform movement mechanism comprises a thermal drive mechanism.

Adderton teaches the following:

- (a) the platform movement mechanism comprises a thermal drive mechanism 154 (Fig. 2; column 13, lines 10 and 11).

A scanning probe is generally driven by a piezo-electric actuator. However, a thermal actuator has a higher image quality because of its longer actuating range. When there is an advantage of extending a scanning probe closer to a scanned object such as Koyanagi's recorded data, it would have been obvious to one of ordinary skill in the art at the time of invention to replace Koyanagi's piezo-electric probe actuator with Adderton's thermal actuator, because the thermal actuator can drive the probe closer to the recording surface which results in lower noise and higher reliability in accessing data.

8. Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koyanagi et al. (U.S. Patent 5,471,064) in view of Duerig et al. (U.S. Patent 4,831,614) and Akamine et al. (U.S. Patent 4,943,719) and further in view of Mamin et al. (U.S. Patent 5,804,710).

Koyanagi in view of Duerig and Akamine teach a memory apparatus very similar to that of the present invention. However, Koyanagi, Duerig and Akamine do not teach the following:

(a) as in claim 26, the media comprises a substrate having a surface with track and sector marks; and

(b) as in claim 27, an alignment device configured to move the media and the platform such that the at least one fine tip portion moves across the track and sector marks and calibrate the media movement mechanisms based on detection of the track and sector marks by the at least one fine tip portion.

Mamin teaches a memory device having tracks, sector marks and alignment device as in above (a) and (b) (Figs. 1 and 8; column 10, lines 2-7).

Although Koyanagi in view of Duerig and Akamine do not teach that the media have tracking means such as tracks and sector marks, however, tracking a recording medium is a required scanning mechanism because it aligns a scanning head in a proper position with respect to the recording medium. For example, Mamin teaches tracks and sector marks which can be accessed by a scanning probe. Hence, it would have been obvious to one of ordinary skill in the art at the time of invention to align a scanning fine tip such as Koyanagi's in view of Duerig and Akamine with tracks and sector marks such as Mamin's, because the tracks and sector marks deflect Koyanagi's scanning tip which then generates servo signals to calibrate the XYZ driving devices.

9. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koyanagi et al. (U.S. Patent 5,471,064) in view of Duerig et al. (U.S. Patent 4,831,614) and Akamine et al. (U.S. Patent 4,943,719) and further in view of Miyazaki et al. (U.S. Patent 5,412,597).

Koyanagi in view of Duerig and Akamine teach a memory apparatus very similar to that of the present invention. However, Koyanagi in view of Duerig and Akamine do not teach the following:

(a) as in claim 28, at least one fine tip portion comprises an arm having a chamfered tip coated in a ferromagnetic material; and

(d) as in claim 28, the fine tip portion is configured to detect at least one of magnetic domains and magnetic domain voids on the media surface.

Miyazaki teaches a scan type magnetic force microscope having a ferromagnetic tip to detect magnetic domains and voids on a media surface (column 13, lines 58-68).

A scanning tunnel probe such as Applicant's can be operated in an AFM mode such as Koyanagi's or a MFM mode such as Miyazaki's. In other words, instead of detecting atomic force on a media surface with Koyanagi's AFM tip, magnetic orientation on the media surface can be detected as well. As an alternative of forming Applicant's read/write device, it

would have been obvious to one of ordinary skill in the art at the time of invention to replace Koyanagi's AFM tip with Miayzaki's MFM tip, because the MFM tip can detect local magnetic force of anomalies formed on the media surface.

10. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koyanagi et al. (U.S. Patent 5,471,064) in view of Duerig et al. (U.S. Patent 4,831,614) and Akamine et al. (U.S. Patent 4,943,719) and further in view of Henderson et al. (U.S. Patent 5,935,339).

Koyanagi in view of Duerig and Akamine teach a memory apparatus very similar to that of the present invention. However, Koyanagi, Duerig and Akamine do not teach the following:

(a) as in claim 33, a cleaning device configured to remove unwanted particles from the fine tip.

Henderson teaches the following:

(a) a cleaning device 10 configured to remove unwanted particles from the fine tip (Fig. 1).

A clean probe is needed to scan a memory surface in order to prevent errors in reading/writing data in the memory. Hence, to remove contaminations on a tip, it would have been obvious to one of ordinary skill in the art to install ~~a~~ a probe cleaning device such as Henderson's in the memory apparatus of

Koyanagi in view of Duerig and Akamine, because Henderson's cleaning device uses electric field to remove debris build-up from the probe.

11. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koyanagi et al. (U.S. Patent 5,471,064) in view of in view of Duerig et al. (U.S. Patent 4,831,614) and Akamine et al. (U.S. Patent 4,943,719) and further in view of Tanaka (U.S. Patent 5,808,973).

(b) Koyanagi in view of Duerig and Akamine teach a memory apparatus very similar to that of the present invention. However, Koyanagi in view of Duerig and Akamine do not teach the following:

(a) as in claim 37, the receptor comprises a polarizing film and a photodiode.

Tanaka teaches a photodetector 37 with a polarizer 38 (Fig. 2).

When Applicant's scanning device is used as a magnetic recording/reproducing apparatus such as Tanaka's, the reflected electromagnetic wave is polarized. It is required to remove the polarization in order to reproduce the original orientation of the wave. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to replace Koyanagi's laser irradiating head and photodetector 201 with

Tanaka's head member 2, because the head member of Tanaka's photodetector has a polarizer means which can eliminate unwanted polarized electromagnetic waves reflected from the media.

12. Claim 59 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koyanagi et al. (U.S. Patent 5,471,064) in view of in view of Duerig et al. (U.S. Patent 4,831,614) and Akamine et al. (U.S. Patent 4,943,719) and further in view of Sakai et al. (U.S. Patent 5,329,122).

Koyanagi in view of Duerig and Akamine teach a memory apparatus very similar to that of the present invention. However, Koyanagi in view of Duerig and Akamine do not teach the following:

(a) as in claim 59, the media comprises a material having energy wells with increase capacitance for storing data on the media.

Sakai teaches the following:

(a) the media 101 comprises a material 102 having energy wells with increase capacitance for storing data on the media (Figs. 10 and 11; column 8, lines 15-41).

A probe using tunneling effect on a recording layer modulates the recording surface with electrons. Hence, to read/write with the tunneling probe, it would have been obvious

to one of ordinary skill in the art to use a recording medium such as Sakai's in the memory apparatus of Koyanagi in view of Duerig and Akamine, because Sakai's recording layer represents electron modulations in form of energy wells/variation of capacitance as a data storage form.

Allowable Subject Matter

13. Claims 10, 11, 13-19, 22, 23, 29, 32, 40-46, 49-51 and 57, 58 and 60 are allowable over prior art.

12. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

As in claim 10, the prior art of record fails to teach or fairly suggest that the electrostatic device comprises a series of prong sets, wherein, the prong sets are attached in series such that a first of the prong sets is attached at a first end to a fixed position of the apparatus, and a second end of the first prong set is attached to a first end of a second of the prong sets, and so on, until a last of the prong sets is attached at a first end to a second end of an $n-1$ prong set, and a second end of the last (n) prong set is attached to one of the media and the platform.

As in claim 22, the prior art of record fails to teach or fairly suggest that wherein the capacitance sensor comprises

a fixed comb having fingers protruding in an x-axis direction, a moving comb connected to the coupling having fingers protruding in an x-axis direction and interleaved among the fingers of the fixed comb.

As in claim 23, the prior art of record fails to teach or fairly suggest that a capacitive comb array comprises a fixed comb and a moving comb each having a set of fingers interleaved between the other set of fingers.

As in claim 29, the prior art of record fails to teaches or fairly suggest that a re-planing device configured to remove at least 4 part of each anomaly on the media surface.

As in claim 32, the prior art of record fails to teach or fairly suggest that the activation/pickup device is at least one of electrostatically and capacitively activated causing the cantilever to vibrate near a resonance frequency of the cantilever; and the activation/pickup mechanism is configured to detect a phase change of vibrations of the cantilever caused by the fine tip interacting with the media surface via at least one of electrical, magnetic, and physical forces.

As in claims 40 and 41, the prior art of record fails to teach or fairly suggest that the z-axis drive mechanism comprises a cantilever connected to the fine tip portion at one end, and at least one set of comb fingers rotatably attached to

the platform allowing movement of the cantilever and the fine tip portion in at least a z-axis direction.

As in claim 43, the prior art of record fails to teach or fairly suggest that the z-axis drive mechanism comprises a lever connected to the fine tip portion at one end; a torsion bar connected at a second end of the lever; an isolation bridge connected at one of the second end of the lever and the torsion bar; a second torsion bar connected to the isolation bridge.

As in claim 45, the prior art of record fails to teach or fairly suggest that the z-axis drive mechanism comprises a lever connected to the fine tip portion at one end; a thermal bimorph, comprising a heater, and at least two materials of different expansion coefficients; wherein a current applied to the heater raises the temperature of the bimorph, causing the bimorph to expand or contract and move the lever and the fine tip portion in a z-axis direction.

As in claim 49, the prior art of record fails to teach or fairly suggest that a cantilever having the fine tip attached at a first end; a moving assembly attached to the cantilever, comprising, a torsion bar electrically isolated and attached to the cantilever, and a force receiver attached to the cantilever and configured to apply force to the cantilever.

As in claim 57, the prior art of record fails to teach or fairly suggest that nubs are placed between the media and the platform for providing a bearing for movement of the platform relative to the media.

As in claim 58, the prior art of record fails to teach or fairly suggest that the media comprises an amplifying media having electrodes at ends of the media, and a control area activated by the tip.

The features indicated above, in combination with the other elements of the claims, are not anticipated by, nor made obvious over, the prior art of record.

Prior Art

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Binnig et al. (6,249747) is pertinent because Binnig teaches a cantilever made of silicon dioxide.

15. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks Washington, D.C.
20231 Or faxed to:

(703) 872-9314 (for formal communications intended for entry. Or:

(703) 746-6909, (for informal or draft communications, please label "PROPOSED" or "DRAFT")

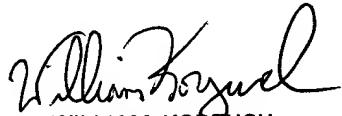
Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim CHU whose telephone number is (703) 305-3032 between 9:30 am to 6:00 pm, Monday to Friday.

2/3/05

Kim-Kwok CHU
Examiner AU2653
February 3, 2005
(703) 305-3032


WILLIAM KORZUCH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600